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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FOUNDRY NETWORKS, INC. 4980 GREAT AMERICA PARKWAY SANTA CLARA, CA 95054			EXAMINER MEW, KEVIN D	
			ART UNIT 2616	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/988,066

Applicant(s)

PATEL ET AL.

Examiner

Kevin Mew

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-11 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/15/2007.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

Final Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 8/9/2007 have been considered. Claims 12-24 have been canceled by applicant. Claims 1-11, 25-28 are currently pending.
2. Acknowledgement is made of the amended abstract with respect to the objection to the specification set forth in the previous Office action. The correction is acceptable and the objection to the specification is now withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-4, 6, 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Dittia et al. (USP 6,654,342).

Regarding claim 1, Dittia discloses an administrative module (cell unstriper and memory controller, col. 5, lines 10-41) for use in a digital switch, wherein the digital switch (switching system, Fig. 1A) includes a plurality of blades (line cards 101, Fig. 1A) coupled to a switching fabric (switch fabric 110, Fig. 1A), and wherein each blade outputs serial data streams (each line card outputs data packets, col. 4, lines 36-51 and Fig. 1A) with in-band control information (with

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flow control information, col. 8, lines 3-22) to said switching fabric (switch fabric 110, Fig. 1A), said administrative module comprising:

a level monitor (flow control information indication) at a receiving blade (at a line card) that monitors levels of the data received and stored at a receiving blade (that monitors the flow of data received and stored at the line card, col. 4, lines 36-51).

a synchronization error detector (a data structure) that detects a synchronization error (detects congested flow condition) based on the amount of data monitored (based on the flow control information indicated, col. 4, lines 36-51).

Regarding claim 3, Dittia discloses the administrative module of claim 1, further comprising:

a flow controller (control logic) that initiates a recovery routine to re-synchronize data in response to detection of a synchronization error (control logic holds its queue data being transmitted to the congested port, col. 4, lines 36-51).

Regarding claim 4, Dittia discloses the administrative module of claim 3, wherein said recovery routine includes throttling back the data (throttle-back its data in a queue for each destination to which it is sending, col. 4, lines 36-51).

Regarding claim 6, Dittia discloses the administrative module of claim 1, wherein said synchronization error detector detects a synchronization error in response to any one or more of

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the following error conditions: an incoming link error, a switching fabric failure, and an outgoing link error (outgoing error to a congested port, col. 4, lines 36-51).

Regarding claim 25, Dittia discloses a method in a network switch, the method comprising:

transmitting a plurality of data blocks (transmitting blocks of information from line cards, Fig. 1A) to a switching fabric of the network switch (to a switching fabric 110 of a switch 100, Fig. 1A), wherein each said data block (information comprises) comprises in-band state information (flow control information), and at least two bytes of packet data (packet data, at least a few bytes, col. 3, lines 34-67, col. 4, lines 1-15, col. 6, lines 4-24 and Fig. 1A), each said data block being transmitted over a respective one of a plurality of first serial links to a respective one of plural switching elements of the switching fabric (each information block transmitted over a respective one of a plurality of serial links out of a line card to a respective one of plural switching elements SE-3 of the switching fabric 110, Fig. 1A);

receiving from the switching fabric the plurality of data blocks (receiving from the switching fabric 110 information blocks, Fig. 1A) and storing the data blocks in a data structure (storing data in the memory 372 of SE-3, col. 10, lines 31-46), the respective data blocks each having been received from the respective switching element of the switching fabric over a respective one of a plurality of second serial links (information blocks each having been received from the switching element SE-3 of the fabric 110 over one of a serial links coming out of SE-3);

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storing the received data blocks according to a source of the respective data block (storing the information blocks in the line card, col. 4, lines 35-51);

detecting an error based on the stored data blocks (detecting a congested condition based on the received flow control information, col. 4, lines 15-51); and

initiating a recovery routine for the error (throttle-back its data in a queue for each destination to which it is sending, col. 4, lines 36-51).

Regarding claim 26, Dittia discloses the method of claim 25, wherein further comprising identifying whether the error is in a said first serial link, a said second serial link (identifying whether a port and/or line card is congested based on the flow control information indication, col. 4, lines 15-51), or the switching fabric depending on the stored data blocks.

Regarding claim 27, Dittia discloses a method in a network switch, the method comprising:

receiving from the switching fabric the plurality of data blocks (receiving from the switching fabric 110 information blocks, Fig. 1A) and storing the data blocks in a data structure (storing data in the memory 372 of SE-3, col. 10, lines 31-46), the respective data blocks each comprising encoded information (information blocks each comprising flow control information) and packet data (packet data, col. 3, lines 34-67, col. 4, lines 1-15, col. 6, lines 4-24 and Fig. 1A) and each having been received from a respective switching element of the switching fabric via a serial link (information blocks each having been received from the switching element SE-3 of the fabric 110 over one of a serial links coming out of SE-3);

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storing the received data blocks according to a source of the respective data block
(storing the information blocks in the line card, col. 4, lines 35-51);
and

detecting an error based on a quantity of the stored said data blocks (detecting a
congested condition, col. 4, lines 15-51).

Regarding claim 28, Dittia discloses the method of claim 28, further comprising initiating
a recovery routine from the error, wherein the recovery routine comprises a flush of the stored
said data blocks (the recovery routine comprises taking data out of the stored buffer queues, col.
4, lines 35-51).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia et al.
(USP 6,654,342) in view of Bianchini, Jr. et al. (USP 6,473,433).

Regarding claim 2, Dittia discloses the administrative module of claim 1, wherein:
said level monitor (flow control information indication) at a receiving blade (at a line
card) monitors the levels of the data stored in each data structure of the receiving blade (that
monitors the flow control information stored in the queues of the line card, col. 4, lines 36-51);

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said synchronization error detector (a data structure) detects at least one of an overflow and underflow condition (detects congested/overflow condition) in the amount of data received from a particular source (based on the flow control information received from another line card, col. 3, lines 34-39, col. 4, lines 36-51).

Dittia does not explicitly show the data received at a receiving blade is sorted based on source information and stored in a set of data structures.

However, Bianchini discloses data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory (col. 17, lines 14-24)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the data received at a receiving blade is sorted based on stripe and source information and stored in a set of data structures.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 7, Dittia discloses a method for detecting synchronization error in a network switch, comprising:

(b) storing the sorted data in a set of data structures at the receiving blade (stored in queues at the receiving line card, col. 4, lines 36-51);

(c) monitoring the levels of data stored in each said data structure (monitors the flow control information stored in the queues of the line card, col. 4, lines 36-51); and

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(d) detecting at least one of an overflow and underflow condition (detects congested/overflow condition) in the amount of data received from a particular source (based on the flow control information received from another line card, col. 3, lines 34-39, col. 4, lines 36-51).

Dittia does not explicitly show (a) sorting data received at a receiving slot based on source information.

However, Bianchini discloses data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory (col. 17, lines 14-24)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the modified system of Dittia will show (a) sorting data received at a receiving slot based on source information.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 8, Dittia and Bianchini disclose all the aspects of claim 7 above. Dittia does not explicitly show the method of claim 7, wherein the source information identifies a slot that sent the data across a switching fabric of the network switch.

However, Bianchini discloses the source information contains a blade/channel ID (identifies a slot) that identifies the blade the sends data across the switching fabric (col. 17, lines 14-24).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the modified system of Dittia will show the source information identifies a slot that sent the data across a switching fabric of the network switch.

The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

Regarding claim 9, Dittia and Bianchini disclose all the aspects of claim 7 above. Dittia does not explicitly show the method of claim 7, wherein the source information identifies a source packet processor that sent the data from a slot across a switching fabric of the network switch.

However, Bianchini discloses the source information contains a blade/channel ID (identifies a slot) that identifies the blade the sends data across the switching fabric (col. 17, lines 14-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Bianchini in showing the data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory such that the modified system of Dittia will show the source information identifies a source packet processor (a line card/blade) that sent the data from a slot (a channel) across a switching fabric of the network switch.

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The motivation to do so is to allow all packets which have the same output priority and blade/channel ID to be stored in the same queue.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia Jr et al. in view of Ohira et al. (USP 6,721,268).

Regarding claim 5, Dittia discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the administrative module of claim 1, further comprising:

a control character presence tracker that identifies the presence of a character during the recovery routine.

However, Ohira discloses a ring-shaped multiplexed network wherein APS K2 bytes are included in the SONET frame transport overhead (col. 6, lines 29-40 and Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Dittia with the teaching of Ohira in using APS K2 bytes in the SONET frame transport overhead.

The motivation to do so is to provide automatic protection switching signaling and alarm transport until the transmission path recovers from the fault.

Allowable Subject Matter

7. Claims 10-11 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 10, a method for maintaining synchronization of striped cell traffic, comprising the steps of:

(a) sending a common character in striped cells in all lanes for a predetermined number of cycles;

(c) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared.

In claim 11, a method for managing out-of-synchronization traffic flow through a cross-point switch in a switching fabric, comprising:

further comprising after said initiating step (c), the steps of:

(d) sending a common character in striped cells in all lanes for a predetermined number of cycles;

(e) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared.

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Response to Arguments

8. Applicant's arguments with respect to claims 1-9, 11 have been considered but they are not persuasive.

Applicant argued on page 1, paragraph 5 of the Remarks that Dittia does not teach or suggest "serial data streams," examiner respectfully disagrees because applicant appears to overlook Fig. 1A of Dittia. As noted in the rejection of claim 1 set forth in the previous Office action, Dittia discloses outputting serial data streams from the output interface 125 of the packet switch 100 shown in Fig. 1A.

Applicant further argued on page 1, paragraphs 5 and 6 of the Remarks that Dittia does not teach or suggest "level monitor," examiner respectfully disagrees. It is noted that Dittia discloses maintaining flow control information for all possible destinations to which it can send information and comprising control logic to place data into and remove data from queue buffers based on the flow control information (col. 4, line 35-51). This teaches the level monitoring function of the line card(s) disclosed in Dittia.

In light of the foregoing, claims 1, 3-4, 6, 11 stand rejected under 35 U.S.C. 102(e) as being anticipated by Dittia et al. (USP 6,654,342), claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia Jr et al. in view of Ohira et al. (USP 6,721,268), and claims 2, 7-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Dittia et al. (USP 6,654,342) in view of Bianchini, Jr. et al. (USP 6,473,433).

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Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Mew
Work Group 2616

KM


CHI PHAM
SUPERVISORY PATENT EXAMINER
10/29/07